STATEMENT OF BASIS
Air Pollution Control
Title V Permit To Operate
Permit No.: V-PI-R50004-03-01

The purpose of this document is to set forth the legal and factual basis for permit conditions, including references to applicable statutory or regulatory provisions. This document also gives the derivation of conditions as required by 40 C.F.R. §71.11(b).

1.0 GENERAL INFORMATION

(A). Applicant and Stationary Source Information

Owner	Facility (SIC Code: 4911)
Energy Alternatives, Inc. 21210 Eaton Ave., Suite C. Farmington, Minnesota 55024 Contact: Philip Kairis (651) 460-6100	Treasure Island Resort & Casino 5734 Sturgeon Lake Road Red Wing, Minnesota 55066 Contact: Vern Hollar (651) 460-6100

(B). Facility Description

Treasure Island Resort & Casino (Facility) is a hotel and gambling casino located on the banks of the Mississippi River on the Prairie Island Indian Community in Red Wing Minnesota.

The U.S. EPA Region 5 (EPA) issued the Facility an Air Quality Construction Permit (Permit No. PSD-PI-R50003-00-01) on December 20, 2000 allowing the construction of four internal combustion diesel engines and subjecting the Facility to the requirements of 40 CFR Part 71 of the federal regulations. The Facility commenced construction on the diesel engines on January 15, 2001. The engines are owned and operated by Energy Alternatives, Inc., and were installed northeast of the Treasure Island Resort and Casino at the Prairie Island Community Wastewater Treatment Facility.

The electricity produced is used for peak load management and backup power for the Facility. The total generation capacity of the engines is 7.3 megawatts (MW). Electricity generated at the Facility is not sold for distribution.

(C). Area Classification

The Prairie Island Indian Community is considered an attainment area for all criteria pollutants. Since the Facility is located

on Indian Country, the United States Environmental Protection Agency (EPA) is primarily responsible for issuing and enforcing any air quality permits for the source until such time that the Tribe or State has EPA approval to do so.

(D). Enforcement Issues

The EPA is not aware of any pending enforcement issues at this Facility.

2.0 PROCESS DESCRIPTION

(A). Summary

The four engines installed at the Facility are 16-cylinder Caterpillar Model 3516B turbocharged engines. Each engine operates at a rated speed of 1800 revolutions per minute(rpm) and produces shaft power of 2,593 brake horsepower (BHP). Each engine burns approximately 130.2 gallons per hour of low sulfur (0.05%) diesel fuel when operated at capacity. The shaft power of each engine drives a 1825 kW generator to produce electricity.

Unit	Fuel Type	Emission Unit ID	Manufacturer /Unit type	Date Installed	Maximum Design Heat Input (MMBtu/hr)
Internal Combustion Engine	Diesel	EU-01	Caterpillar 3516B	05/25/01	16.76
Internal Combustion Engine	Diesel	EU-02	Caterpillar 3516B	05/25/01	16.76
Internal Combustion Engine	Diesel	EU-03	Caterpillar 3516B	05/25/01	16.76
Internal Combustion Engine	Diesel	EU-04	Caterpillar 3516B	05/25/01	16.76

A 10,000-gallon underground diesel fuel tank is located adjacent to the building, and is subject to underground storage tank regulations under the Resource Conservation, and Recovery Act (RCRA).

(B). Insignificant Activities

Unit/Activity	Basis
Crankcase blowby, venting organic compounds from the oil pan into the engine room	40 CFR 71.5(c)(11)(ii)(A)
Access road	40 CFR 71.5(c)(11)(ii)(A)

(C). Potential Emissions

Potential to Emit Summary[a,b,c]							
Emission Unit	VOC[d] tpy	NOx[e] tpy	CO[e] tpy	PM[e] tpy	PM10[e,d] tpy	SO2[e] tpy	Total HAPs[d] tpy
EU-01	5.08	163.99	13.36	3.81	3.13	3.99	0.11
EU-02	5.08	163.99	13.36	3.81	3.13	3.99	0.11
EU-03	5.08	163.99	13.36	3.81	3.13	3.99	0.11
EU-04	5.08	163.99	13.36	3.81	3.13	3.99	0.11
Total Potential Emissions	**20.32**	**655.95**	**53.44**	**15.24**	**12.53**	**15.96**	**0.44**

a Calculations based on 100 percent load, 8760 hours of operation per year.
b tpy= tons per year
c tpy= emission factor(lb/hr-See (F) below)*8760hr/year*(1 ton/2000lbs)
d Calculations based on emission factors from U. S. EPA AP-42, Chapter 3.3 for Large Stationary Diesel, dated 10/96.
e Calculations based on emission factors provided by Ziegler for a Caterpillar 3516B dry engine manifold, as stated in permit application.

(D). Projected Emissions

Projected Emission Summary[a,b]							
Emission Unit	VOC tpy	NOx tpy	CO tpy	PM tpy	PM10 tpy	SO2 tpy	Total HAPs tpy
EU-01	0.32	10.30	0.84	0.24	0.20	0.25	0.01
EU-02	0.32	10.30	0.84	0.24	0.20	0.25	0.01
EU-03	0.32	10.30	0.84	0.24	0.20	0.25	0.01
EU-04	0.32	10.30	0.84	0.24	0.20	0.25	0.01
Total Projected Emissions	**1.28**	**41.18**	**3.36**	**0.96**	**0.79**	**1.00**	**0.03**

a Emission estimates above are based on 550 hours of operation per year in accordance with Permit Condition 2.0(A)(2).
b tons per year (tpy)

(E). Hazardous Air Pollutant (HAP) Emissions

Hazardous Air Pollutants Summary (per engine)				
HAP	Emission Factor lb/MMBtu	PTE Emission[a] lbs/hr	PTE Emission[b] tpy	Projected Emission[c] tpy
Benzene	7.76 E-04	0.0130	0.0569	0.00357
Toluene	2.81 E-04	0.00470	0.0206	0.00129
Xylenes	1.93 E-04	0.00323	0.0141	0.000888
Formaldehyde	7.89 E-05	0.00132	0.00578	0.000363
Acetaldehyde	2.52 E-05	0.000422	0.00185	0.000116
Acrolein	7.88 E-06	0.000132	0.000578	0.0000363
Naphthalene	1.30 E-04	0.00217	0.00953	0.000598
Total HAPs		**0.0250**	0.109	0.007

a lbs/hr=(130gal/hr)*(7lb/gal)*(18,390BTU/lb) *(10^{-6}MMBtu/Btu)* Emission

Factor(lb/MMBtu)

b tpy=(lb/hr)*(8760hr/year)*(1 ton/2000lbs)

c Projected Emission estimates above are based on 550 hours of operation per year in accordance with Permit Condition 2.0(A)(2).

(F). Emission Factors

Emission Factors							
Emission Unit(s)	VOC[a,b] lb/MMBtu	NOx[a] lb/hr	CO[a] lb/hr	PM[a] lb/hr	PM10[c] lb/hr	SO2[d] lb/hr	HAPs[e,f] lb/hr
EU-01 through EU-04	1.16	37.44	3.05	0.87	0.715	0.911	0.0250

a Emission factors provided by Ziegler for a Caterpillar 3516B dry engine manifold, as stated in permit application. Based on 100 percent load.

b VOC measured as hydrocarbons.

c PM10 is calculated based on the fraction of PM10 in PM (provided in AP-42, Table 3.4-2) multiplied by the emission factor for PM provided by the engine manufacturer:
i.e. PM10(lb/hr)=(0.0573lb/MMBtu)/(0.0697lb/MMBtu) * 0.87 lb/hr

d SO2(lb/hr)=(130.2 gal/hr)*Density(7lb fuel/gal fuel)*(0.05part S/100part fuel)*(1lbmol S/32lb s)*(1lbmol S/1lbmol SO2)*(64lb SO2/1lbmol SO2)

e See (E) above for HAP calculations.

f From U. S. EPA AP-42, Chapter 3.3 for Large Stationary Diesel, dated 10/96.

3.0 APPLICABLE REGULATIONS

(A). Prevention of Significant Deterioration (PSD)

The EPA issued the Facility a PSD permit (Permit No. PSD-PI-R50003-00-01) to install four internal combustion engines on December 20, 2000. In accordance with 40 CFR 71.6(a)(1), the applicable PSD permit limitations were included in this permit.